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REPLY AFTER FINAL REJECTION
EXPEDITED PROCEDURE EXAMINING GROUP 1700

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Tomo UENO

Group Art Unit: 1762

Serial No.: 09/646,988

Examiner: Bret P. Chen

Filed: November 16, 2000

For: A METHOD FOR FORMING A FILM

REQUEST FOR RECONSIDERATION

PLEASE ACCEPT THIS AS AUTHORIZATION TO DEBIT OR CREDIT FEES TO DEP. ACCT. 16-0331 PARKHURST & WENDEL

Commissioner for Patents
Washington, D. C. 20231

Sir:

Applicant requests reconsideration of the rejections in the Final Rejection mailed May 23, 2002 in view of the following remarks.

The rejection of claims 1 to 11 under the first paragraph of 35 USC 112 (new matter) for containing the phrase "metastable excited state" in independent claims 1 and 10 is respectfully traversed. Applicant submits that the term "metastable excited state" is one readily understood by those of skill in the art and is supported in the application as filed. A metastable state

permits enlargement of variations of molecules to be disassociated and enhancement of the disassociation efficiency. The full phrase in claims 1 and 10 reads "metastable excited state which is required to dissociate said gaseous molecules into their respective elements." See the discussions in the specification at pages 5 and 6. Moreover, the term is well known in the art as the newly cited Matsui et al. '630 patent shows. An "excited metastable" state is specifically indicated at column 5, lines 25 to 28. See also the discussion at column 4, lines 62 to 68. The Examiner is also directed to the two Ueno et al. articles filed with the March 5, 2002 Amendment Under 37 CFR 1.111. The discussion in applicant's specification clearly supports a characterization of that particular energy state as a "metastable excited state." Should the Examiner prefer other terminology to describe this state, which is supported by the specification, he is asked to contact the undersigned.

The rejection of claims 1 to 11 under 35 USC 103 as unpatentable over Matsui et al. '630 or Ueno et al. '199, both newly cited, is respectfully traversed.

While it is acknowledged that Matsui et al. '630 relates to a process wherein energy differential absorption is carried out in

the same manner as in the instantly claimed invention, applicant points out that the metastable states of helium or neon are the only ones shown in the reference to be generated by a plasma excitation means. Moreover, the gases used are ones that are said readily to generate cations. Krypton and xenon are not described in Matsui et al. '630 as materials having an excited metastable state; rather krypton and xenon are listed as examples of materials that change to cations and readily generate same; see the disclosure at column 5, lines 42 to 47. In the reference process, the excited metastable helium or neon collides with a gas such as krypton or xenon to generate a cation X^+ to increase the electron number in the plasma. There is no teaching or suggestion of using krypton or xenon in an excited metastable state. The suggestion to do so comes only from applicant's specification.

Using the Matsui et al. '630 process, the metastable helium and neon states permit given molecules such as oxygen gas to be disassociated into oxygen atoms but there is a restriction of the variation of molecules to be disassociated and the dissociation energy is relatively low. In contrast, in the present invention a metastable energy state of krypton or xenon permits (as compared to helium or neon) an enlargement of the molecules to be disassociated

and the disassociation energy is enhanced. The Examiner is referred to the instant specification at pages 16 to 18, particularly the 11th and 12th preferred embodiments with krypton and xenon, respectively, showing oxidation taking place at low operating temperatures, an object of the present invention. Applicant's invention differs significantly (and patentably) from the Matsui et al. '630 teachings.

Ueno et al. '199 is not directed to the technique claimed here. Indeed, the reference only teaches that a rare gas ion or atom that is pre-excited at a high ionization potential or metastable energy level serves as an active species permitting reaction of the rare gas ions or atoms at a higher energy level with molecules to be dissociated, ionized or excited. There is nothing in the reference regarding the advantages of using krypton or xenon in an excited metastable state as claimed and explained herein. Indeed, the Examiner acknowledges that the reference "fails to teach generating a plasma of the mixture"; see page 3, lines 5 and 6 of the Final Rejection. With no plasma generation taught or suggested, how can one assert that the reference leads the artisan to the present invention which requires formation of a

metastable excited state of krypton or xenon? The rejection is in error. Reconsideration of the rejection is earnestly solicited.

The Examiner is requested to telephone the undersigned if changes are required in the case prior to allowance.

Respectfully submitted,

PARKHURST & WENDEL, L.L.P.

August 22, 2002
Date

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Attorney Docket No.: SUGI:093

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